

4 mistakes your patients should avoid with wearables

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Evidence on the impact of wearable digital health-monitoring devices is still emerging, as clinicians and researchers work to find out what these gadgets can and cannot do. In the meantime, however, there is a growing idea about the potential medical missteps patients should be aware of when donning wearables.

To help ensure that mobile-health applications are safe, effective and trusted among patients and physicians, the AMA has collaborated with other industry partners through the Xcertia nonprofit to develop guidelines for privacy, security, operability, usability and content.

While physicians are still digesting recent news from the American College of Cardiology's annual meeting regarding the capability of Apple Watch to detect atrial fibrillation (AFib) in a small group of its users, in the meantime they are tasked with helping patients properly engage with wearable devices in a way that improves health instead of upping anxiety.

Here are four things your patients should watch out for when it comes to wearables' health impact.

Disengaging before the benefit can be realized. The first mistake that patients make with wearables is to give up on them prematurely. As with many interventions, there is often an initial period when patients are enthusiastic about the wearables' role in improving their health.

But that can drop off quickly if patients find the wearables inconvenient because of too-frequent recharging needs, or because meaningful benefits are not being seen, said Steven Steinhubl, MD, the director of digital medicine at the Scripps Research Translational Institute.

To address this, patients need adequate instruction and available contacts for continued technology support, said Virginia Sun, PhD, RN, an associate professor with the Department of Population Sciences at City of Hope, a comprehensive cancer center in Duarte, California.

“We set up the device for patients instead of just handing them a box and asking them to open it at home,” she said. “There should be designated staff whose primary responsibility is to provide technology support.”

For wristband devices, patients need to understand that it is better if they wear the device on their nondominant hand, and the devices preferably should be waterproof and have a long battery life—at least one year is preferred, said Sun. She co-wrote a *JAMA Surgery* report on how a wristband pedometer helped identify patients who may need more support to regain function after major abdominal cancer surgery.

“Patients should keep their device on as much as possible,” she said. “This helped with adherence, which is important because we will have no data if patients aren’t wearing the device.”

Ignoring the body’s messages and relying solely on the device. There is something worse that can happen, according to Dr. Steinhubl, lead author of a *JAMA* study on how the use of wearable electrocardiogram (ECG) patch resulted in earlier detection of AFib in high-risk individuals.

Patients may experience discomfort and rely on the device for a diagnosis.

“They think ‘no news is good news,’” Dr. Steinhubl said.

He added that patients will wrongly conclude that “if they’re having chest pain, it can’t be their heart” because their ECG device is showing a normal reading.

Getting fixated on the data, a recipe for high anxiety. The opposite is also true. Instead of reassuring that all is well, wearables can increase patient anxiety, Dr. Steinhubl said.

He recalled how a colleague became concerned because his wearable device was indicating a rapid heartbeat while he was sitting still. The man called his doctor, but his doctor was not available, which caused his anxiety to escalate.

Gregory M. Marcus, MD, a professor of medicine at the University of California, San Francisco, noted how concern over a high heart rate increases adrenaline, causing it to beat faster.

Heart-rate readings are an almost universal feature of wearable devices and are commonly misunderstood, said Dr. Marcus, who co-authored a *JAMA Cardiology* study on smartwatches and passive detection of AFib.

“A normal, healthy heart rate is by its nature variable, and what determines whether a heart rate is too fast or too slow is rarely the number,” he said. “In general, when we need to worry about heart rate is based on symptoms—such as when feeling faint or inappropriately fatigued with no or minimal exertion.”

Similarly, patients can become fixated on the data. Patients can get stuck on one number such as daily steps and ignore other health variables such as diet or sleep, according to a recent report from The Doctors Co., a medical liability insurer.

Interpreting the data without physician help. Home ECG monitoring with wearable adhesive patches transmitting data to a physician trained to interpret the readout is a digital-health success story, Dr. Marcus said. But the direct-to-consumer variety used by people who are not at risk for AFib tend to yield false positives that may lead to health care use that is unnecessary, wasteful and possibly dangerous—such as blood thinners being unwarrantedly prescribed.

“Wearables do have a terrific capacity to be extremely helpful, but we shouldn’t be naive about the potential downsides,” Dr. Marcus said. “This is a new frontier in medicine: Private, for-profit companies marketing devices that diagnose disease in a way that bypasses physicians and thus far have circumvented the scientific rigor that would normally be required to change clinical practice.”

The AMA is committed to making technology an asset rather than a burden, and preparing physicians and patients to use these tools for improved health outcomes. The AMA Digital Health Implementation Playbook packages key steps, best practices and resources to extend care beyond the exam room.